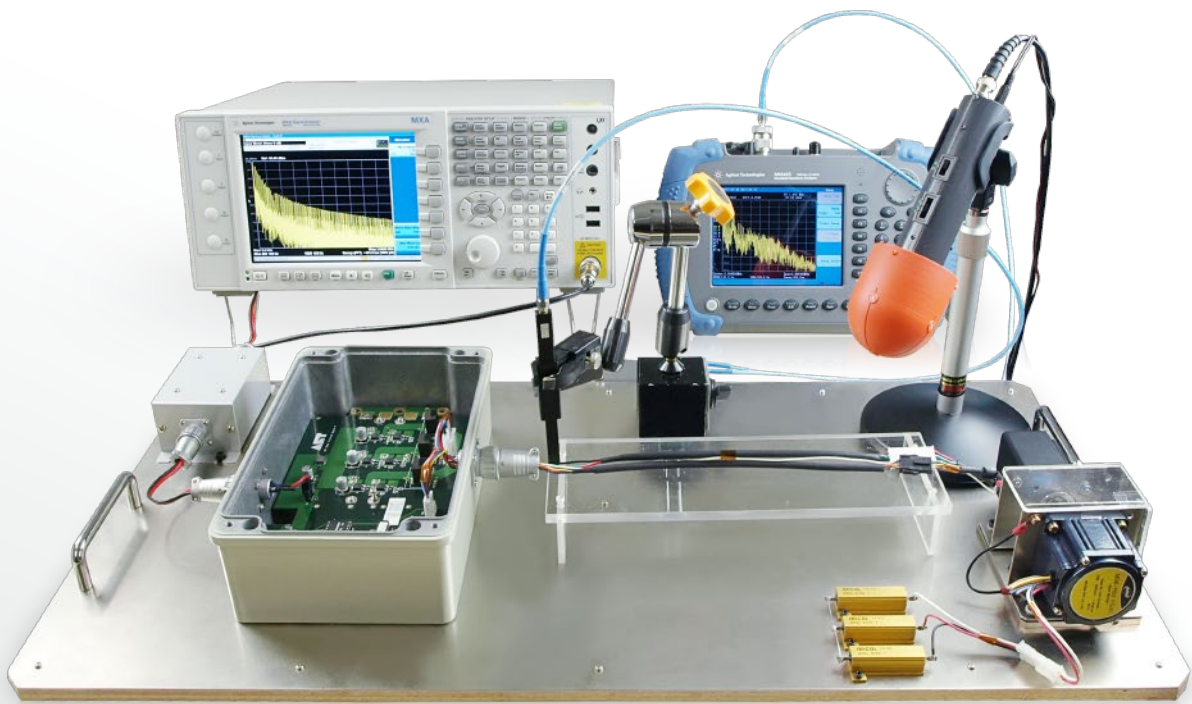


- Visualizing Electromagnetic Field -
Magnetic Field Measurement System



**Electromagnetic Near
Field Measurement Probes**

- Low-frequency (Active Probes)
- Low-frequency, High-current, Wideband
- High-frequency (GHz), Wideband

Active Antenna

- High-sensitivity, Low-frequency

Measurement Instruments

- Spectrum Analyzers

Probe Amplifiers

- High-gain, Ultra-wideband
- High-gain, Ultra-low noise

Measurement Systems

- High-precision Scanner System
- Compact Scanner System

Magnetic Field Probes



AEKP001 (Active Probe)
• Low-frequency





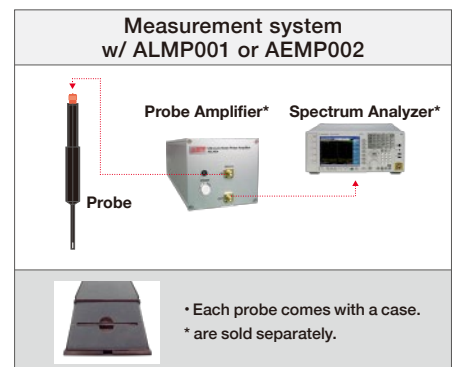
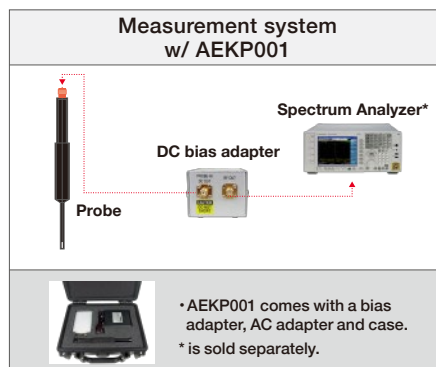
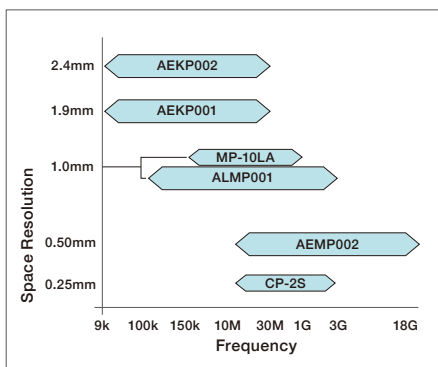
ALMP001
• Low-frequency
• High-current
• Wideband



AEMP002
• High-frequency (GHz)
• Wideband

Specifications

Model	AEKP001	AEKP002	ALMP001	AEMP002
Frequency	9kHz - 30MHz		100kHz - 3GHz	10MHz - 18GHz
Measurement range	0.02A - 14A	0.002A - 1.4A	5A (max)	—
Space resolution	1.9mm	2.4mm	1.0mm	0.5mm
Connector	SMA Female		SMA Female	SMA Female
Detector size	9.0mm×3.5mm		12.0mm×3.0mm	2.5mm×0.7mm
Attachment	Compatible with the attachment for CP-2S in 4EM500/4EM200U (NEC Engineering, Ltd.)			
DUTs	<ul style="list-style-type: none"> • Power circuits • DC/DC converters • Power devices 		<ul style="list-style-type: none"> • Inverter equipments • Ferromagnetic field power equipments • Power equipments 	<ul style="list-style-type: none"> • Boards with high speed digital devices (high speed FPGA, DSP, CPU) • High speed digital communication boards (PCI Express 2.0, USB3.0, HDMI1.3, etc.) • Microwave circuit boards and components
Recommended Probe Amplifier	Not needed (Probe Amplifier embedded)		AELA001, AEMA001	AEWA001
Power supply	17V - 22V DC (AC adapter included)			
Compatible probes (NEC Engineering's products)			 <ul style="list-style-type: none"> • Model : MP-10LA • Frequency : 150kHz - 1GHz • Space Resolution : 1.0mm (vary by DUTs) • Connector : SMA Female • Detector Size : 12mm×3mm 	 <ul style="list-style-type: none"> • Model : CP-2S • Frequency : 10MHz - 3GHz • Space Resolution : 0.25mm (vary by DUTs) • Connector : SMA Female • Detector Size : 2mm×1mm



Probe Amplifiers



AELA001
 • High-gain
 • Ultra-low noise



AEMA001
 • High-gain
 • Ultra-low noise



AEWA001
 • High-gain
 • Ultra-wideband

Specifications

Model	AELA001	AEMA001	AEWA001
Frequency	100kHz - 1GHz	10MHz - 6GHz	10MHz - 20GHz
Noise figure	≤ 5dB	≤ 5dB	10MHz - 250MHz: ≤ 15.0dB 250MHz - 13GHz: ≤ 5.0dB 13GHz - 20GHz: ≤ 7.5dB
Gain	≥ 50dB	10MHz - 1GHz: ≥ 40dB 1GHz - 6GHz: ≥ 30dB	10MHz - 6GHz: ≥ 40dB 6GHz - 16GHz: ≥ 30dB 16GHz - 20GHz: ≥ 25dB
1dB compression	≤ -43dBm	10MHz - 1GHz: ≤ -28dBm 1GHz - 6GHz: ≤ -18dBm	10MHz - 6GHz: ≤ -24dBm 6GHz - 16GHz: ≤ -18dBm 16GHz - 20GHz: ≤ -17dBm
Max. output power	≥ 5.5dBm	≥ 8dBm	10MHz - 6GHz: ≥ 12dBm 6GHz - 16GHz: ≥ 10dBm 16GHz - 20GHz: ≥ 8dBm
Typical performance at 25°C			
SWR	≤ 2	10MHz - 1GHz: ≤ 2 1GHz - 6GHz: ≤ 3	10MHz - 10GHz: ≤ 2 10GHz - 20GHz: ≤ 4
Input level	+5dBm (max)	+13dBm (max)	+18dBm (max)
Impedance	SMA Female 50Ω	SMA Female 50Ω	K Female 50Ω
Power supply	17V - 22V DC ≤ 150mA	15V - 22V DC ≤ 110mA	12V DC 330mA (16.5V in max.)
Dimensions	W100mm×D300mm×H90mm		
Weight	Approx. 1kg		
Recommended probes	ALMP001, AEMP002, CP-2S, MP-10LA *Please see the probe specifications for details.		
Accessories	Calibration data, AC adapter		

High-sensitivity Low-frequency Active Antenna



AALF001
Directional/Nondirectional selectable

Specifications

Model	AALF001
Directional	X, Y, Z each axis / composition
Frequency	9kHz - 3MHz
Impedance	50Ω
VSWR	≤ 1.2
Sensitivity	80dB μV/m (9kHz)
Output connector	BNC Female
Power supply	17V - 22V DC 55mA

Operating temperature range	-20°C to + 50°C
Weight	Approx. 200g
Size	Antenna radome Φ67x90mm Grip Φ38x130mm
Applications	· Power inverter · Switching power supply

- AALF001 comes with an AC adapter.
- Spectrum Analyzer and cable are sold separately.

EMI / ESD Visualization Systems

4EM500 (NEC Engineering, Ltd.)

High-precision Scanner System

4EM500 measures and displays the magnetic field intensity distribution of various DUTs.



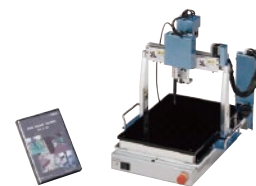
Specifications

DUTs	Equipments, PCBs, LSIs, Modules, Components, etc.
Measurement method	Four-axis stage operates probe.
Measurement range	X, Y, Z = 500 x 500 x 210mm θ = +/- 90deg
Stepping motion	X, Y, Z = 0.01mm θ = 1deg
Mountable probes	AEKP001, ALMP001, AEMP002, CP-2S, MP-10LA, etc.
Dimensions	860mm(W) x 862mm(D) x 840mm(H) *excl. protruding parts
Weight	Approx. 110kg
Power supply	100V - 240V AC 50/60Hz
Control interface	Motor Control Board (USB or PCI-Express), GPIB-USB
Measurement instruments	Spectrum Analyzer

4EM200U (NEC Engineering, Ltd.)

Compact Scanner System

4EM200U is the compact type of the High-precision Scanner System 4EM500.

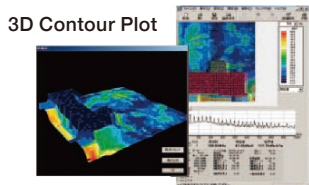


Specifications

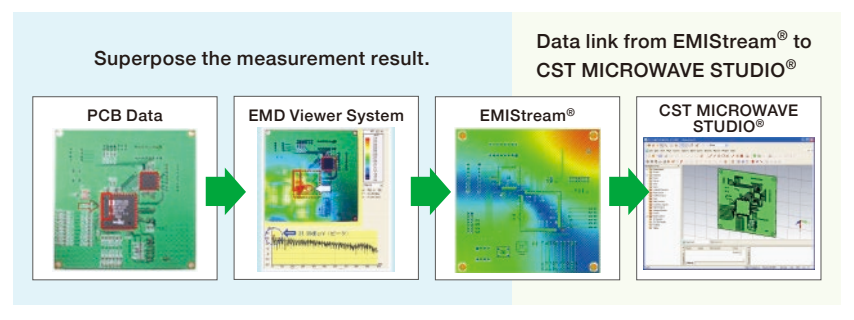
DUTs	PCBs, LSIs, Modules, Components, etc.
Measurement method	Four-axis stage operates probe.
Measurement range	X, Y, Z = 200mm x 200mm x 100mm θ = 0 and 90deg
Stepping motion	X, Y, Z = 0.1mm
Mountable probes	AEKP001, ALMP001, AEMP002, CP-2S, MP-10LA
Dimensions	297mm(W) x 420mm(D) x 500mm(H) *excl. protruding parts
Weight	Approx. 15kg
Power supply	100V - 240V AC 50/60Hz
Control interface	Motor Control Card (USB), GPIB-USB
Measurement instruments	Spectrum Analyzer

Optional function (4EM500)

Adjust Probe's height according to the change of the DUTs height.



Measurement and Simulation



Accessories



RF cables



Rotary joint

Spectrum Analyzers

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